

SOFTWARE/SYSTEMS

Agencies latch onto Internet interface

Attention internauts: Mosaic and WWW multimedia tool can make network access much easier

By SHAWN P. MCCARTHY
GCN Staff

Internet information too often gets swamped by the sea of data.

To stay afloat, a handful of agencies have turned to a free client interface called Mosaic. Mosaic merges data culled from servers into interactive on-screen documents, where users can manipulate it with icons and text hyperlinks.

Mosaic works behind the screens with well-known server applications like the University of Minnesota's Gopher, the Wide Area Information Server (WAIS) developed by Thinking Machines Corp., and World

Wide Web (WWW), developed at the European Center for Nuclear Research in Geneva.

Users say they get the best results when Mosaic links with multimedia-capable WWW servers to streamline the searching and organizing power of WWW. The result is full-color, mouse-driven multimedia screens that nearly fulfill the dream of cruising along an easy-access information superhighway.

Discovery tool

Mosaic was developed at the National Center for Supercomputer Applications in Champaign, Ill.

Marc Andreessen, lead developer of the Unix version that formerly was known as

xmosaic, called it an "information discovery and retrieval tool." Mosaic for Unix was released last spring; the first versions for Macintosh and MS-DOS/Microsoft Windows clients came out last fall.

The U.S. Geological Survey in Reston, Va., uses Mosaic for internal project tracking, "but primarily it's an outreach tool," said Bill Miller, deputy chief of IIRM at USGS' Office of Energy and Marine Geology. "Most of our users come in from outside."

Miller said he was able to download, set up and use the Mosaic interface on a Unix workstation in about two hours. But preparing USGS information for use by other Mosaic users took much longer.

"We're just one of the players in what seems to be an exciting new method for the government to communicate with the public," he said. "I think it will save the taxpayers money because we can offer data sets and make documents more readily available, including those that might otherwise be out of print."

USGS already publishes on the Internet the out-of-print Federal Government Data Committee's manual of government data products, Miller said. The agency began loading a Sun Microsystems Inc. 4/380 server with Mosaic-compatible files in June, and that information became visible on the Internet in late July.

Traffic picked up quickly. From Nov. 1 to Dec. 3, he said, Mosaic clients made 282,353 connections. They took 5.5 gigabytes of data from the USGS server and made thousands of jumps to other servers.

That was an experiment, but "we are convening a committee to make this an official part of the survey's activities," Miller said.

It took about 2,000 hours to set up USGS clients, create and install the files, and evaluate the system. But there was virtually no expense; the software was obtained free from the supercomputing center, and implementation was done by a volunteer.

In use at USDA

Eldon Frederick, a Purdue University professor who works part time for the Agriculture Department's Cooperative Extension Service, said he has set up Mosaic clients on Unix workstations at USDA's Washington headquarters.

Users at USDA can access extensive agricultural data at Purdue and other sites. Frederick said the National Science Foundation also is testing Mosaic clients.

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Shopping for Internet access?

Six tips for sharing or building your own information ramp

- Set up individual accounts on another agency's access system if you have only a few users.
- Assess your needs, budget and abilities before starting to shop for a service provider. Charges vary greatly because providers pay different rates for their own connections and leased lines.
- Decide between dial-on-demand for light usage or a dedicated, leased-line gateway for heavy usage.
- Ask providers whether they furnish e-mail, SLIP or PPP connections, remote connections to other systems, graphical tools and news feeds.
- Contract for a turnkey system if you don't have the internal resources to put one together with shareware from other agencies.
- Work out security procedures with your service provider.

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"Mosaic is here, and it's working today," Frederick said. "For most places, it will just be a matter of getting the connectivity to use it."

To display link words in bold or italics, Mosaic uses files stored in the Hypertext Markup Language, a subset of the International Standards Organization's Standard Generalized Markup Language (SGML).

To name resources, Mosaic follows the Uniform Resource Locator mechanism, a standard being developed by the Internet Engineering Task Force. Andreessen described the locator as an attempt to envelop and associate the digital information universe through a common nomenclature with document pointers and controllable searches.

Page makeup

Mosaic classifies data as pages, basically "a collection of files, graphics and text," according to Miller. USGS puts out more than 75,000 "pages" of collected information per month.

"Think of a home page as an electronic visitor's center," said Elliot Christian, office chief at the USGS Information Systems Division. "Think of it as a glossy brochure that tells people what you have on file."

When clients link to a remote server, a "home page" is established. Icons and hypertext allow the users to click and follow links

to other documents, even those located on other systems.

Each new page in turn can make new links, although files not specifically formatted for Mosaic might appear as straight text. Mosaic tracks users, but the actual log-ins are handled by the user. Servers usually pass back address-

es so a peer-to-peer connection can be made independently.

The sites visited are remembered for quick future access, and "hot lists" of important documents are monitored for updates.

Another function is Mosaic's support for "asynchronous collaboration." This allows

distributed users to collaborate in writing and modifying central copies of text, hypertext and multimedia documents.

Mosaic software and documents are available via Internet File Transfer Protocol from <ftp.ncsa.uiuc.edu>. Andreessen said several hundred copies have been distributed. ■